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EXAMINER

SCHEIBEL, ROBERT C

ART UNIT

PAPER NUMBER

2666

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4

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/639,084

Applicant(s)

KIM, BOO SOO

Examiner

Robert C. Scheibel

Art Unit

2666

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8, 10, 11, 14-16 and 19 is/are rejected.
- 7) ☒ Claim(s) 4, 9, 12, 13, 17, 18 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to because the bus labeled "Loop" in Figure 5 has not been described in the specification. As understood by the examiner, the transmitting bus master routes a packet from the U-turn node to either the test node or the node indicated in the packet header based on the value of the U-turn loop register. As described in the specification on page 20, lines 2-14, the transmitting packet routing bus 40 is used in both cases. The applicant must either amend the specification to describe this Loop bus, or remove it from the drawing. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:
- "transmitting" on line 9 of page 7 should be changed to "receiving";
 - "11" on line 11 of page 7 should be changed to "21";
 - "transmitting" on line 11 of page 18 should be changed to "receiving";
 - in the phrase "the receiving bus master 43 compares the address values of the second register 43a with one another" on lines 6-7 of page 19, it is not clear what is being compared. The phrase should be updated to clearly explain what addresses are being compared.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 19 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 recites the limitation "wherein the step of writing the test data packet to the U-turn node by the receiving bus master includes the steps of" in lines 5-6 on page 28. There is insufficient antecedent basis for this limitation in the claim. It is not clear which of the 2 steps of writing the test data packet to the U-turn node (2nd or 4th) of claim 16 is being referenced.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art admitted by the applicant in view of U.S. Patent 6,052,362 to Somer.

Regarding claim 10, the limitation of writing the test data packet of the test node (a transmitting node) by the receiving bus master is admitted as prior art by applicant in

the lines from line 20 of page 3 through line 2 of page 4. The limitation of routing the test data packet to the receiving driver of the test node (a transmitting node) is admitted by applicant as prior art in lines 16-20 of page 3.

Regarding claim 16, the limitation of writing the test packet to the U-turn node by the receiving bus master is admitted as prior art by applicant in lines 14-16 of page 6 "At this time, since the data packet cannot be directly written from the receiving packet routing bus 21 to the transmitting packet routing bus 20, the data packet is written to the u-turn node 15". The limitation of writing the test data packet of the U-turn node to the transmitting node by the transmitting bus master is admitted as prior art by applicant in lines 16-19 of page 6 "Then, the transmitting bus master 22 reads the data packet from the U-turn node 15 and determines the destination address from the data packet. The data packet is then written to the transmitting node (one of the transmitting nodes 16-19) with the appropriate destination address". Similarly, the fourth step (of writing the test packet to the U-turn node) is admitted as prior art by applicant in lines 14-16 of page 6. The fifth step of routing the test data packet of the U-turn node by the transmitting bus master is admitted as prior art by applicant in lines 16-19 of page 6.

The prior art admitted by applicant does not expressly disclose the limitation of writing a test data packet for routing in a receiving node to a test node for testing by a test element and the limitation of looping the test data packet, both of claim 10. The prior art admitted by applicant also does not expressly disclose the limitation of writing a test packet to a test node by a testing element of claim 16.

Somer discloses the limitation of claim **10** of writing a test data packet for routing in a receiving node to a test node for testing by a test element in lines 12-16 of column 9. The limitation of claim **10** of looping the test data packet is taught by Somer in Figure 2 as described in the lines from line 66 of column 4 through line 4 of column 5 "For one embodiment, the physical transceiver 243 is operating in the loopback mode such that the test packets are transmitted from the transmitting channel of the physical transceiver 243 to the receiving channel of the physical transceiver 243. This type of loopback mode is referred to as a transceiver loopback mode".

The limitation of claim **16** of writing a test packet to a test node by a testing element is taught by Somer in lines 12-16 of column 9 "During testing, a test packet is transmitted to the test port 580b of the repeater core logic 510". The transmitting of the test packet constitutes writing the test packet to the transmitting node (repeater core logic 510).

The prior art disclosed by applicant and Somer are analogous art because they are from the same field of endeavor of loop testing communication systems involving transmit and receive busses. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the prior art disclosed by the applicant by adding a test element for writing a test data packet for routing in either a receiving or transmitting node and by looping the test data packet at the receiving node. The motivation for doing so would be to test the communication system. This is suggested by Somer in 36-40 of column 1 "if there is a breakdown in a communication network system, it is desirable to test the communication hub in its normal working environment

without removing the communication hub from the network". Therefore, it would have been obvious to combine Somer with the prior art disclosed by the applicant for the benefit of testing communication equipment to obtain the invention as specified in claims 10 and 16.

7. Claims **11 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art admitted by the applicant in view of U.S. Patent 6,052,362 to Somer.

The limitations of claim 10 are unpatentable based on the prior art admitted by the applicant in view of Somer as described in detail above.

The prior art disclosed by the applicant does not expressly disclose the limitation of claim 11 of the test node acting as a transmitting node used to exclusively rout the test data packet. The prior art admitted by applicant also does not expressly disclose the limitation of claim 14 of the looping step being performed in response to a loop indicating signal.

The limitation of claim **11** of the test node acting as a transmitting node used to exclusively rout the test data packet is taught by Somer in lines from line 66 of column 5 through line 1 of column 6 "For one embodiment, the data generator and checker circuit 220 is located within the repeater 210". With the test element located within the transmitting node (repeater core), the test node acts as a transmitting node to exclusively route the test data packet.

The limitation of claim **14** of the looping step being performed in response to a loop indicating signal is taught by Somer in lines 62-63 of column 8. The loopback enable input 630a is the loop indicating signal.

The prior art disclosed by applicant and Somer are analogous art because they are from the same field of endeavor of loop testing communication systems involving transmit and receive busses. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the prior art disclosed by the applicant by adding a test element for writing a test data packet for routing in either a receiving or transmitting node and by looping the test data packet at the receiving node (and providing a loop indicating signal to control the looping). The motivation for doing so would be to test the communication system. This is suggested by Somer in 36-40 of column 1 "if there is a breakdown in a communication network system, it is desirable to test the communication hub in its normal working environment without removing the communication hub from the network". Therefore, it would have been obvious to combine Somer with the prior art disclosed by the applicant for the benefit of testing communication equipment to obtain the invention as specified in claims 11 and 14.

8. Claim 1-3, 5-8, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art disclosed by the applicant in view of U.S. Patent 6,052,362 to Somer and in further view of U.S. Patent 6,363,067 to Chung.

Regarding claim 1, the prior art admitted by the applicant teaches the limitation of a transmitting node and a receiving node, each having a transmitting driver and a receiving driver. The prior art disclosed by the applicant further teaches a transmitting bus master and a receiving bus master.

Regarding claim 7, the limitation of the transmitting node being connected to a processor board of a base station system is admitted as prior art by applicant in lines

20-21 or page 5 "The data packet is then routed from one of the transmitting nodes 16-19 to another processor board in the base station system". The limitation of the receiving node being connected to a trunk node of a base station controller is admitted as prior art by the applicant in lines 7-8 of page 5 "The data packet is then routed from the receiving nodes 11-14 to a trunk node of the base station controller (BSC)".

Regarding claim 8, the U-turn node connecting the transmitting packet routing bus to the receiving packet routing bus is admitted as prior art by applicant in Figure 1.

The prior art disclosed by the applicant does not expressly disclose the limitation of claim 1 of the loop path in the receiving and transmitting nodes. The prior art disclosed by the applicant also does not expressly disclose limitations of the register for storing and address in the transmitting and the receiving bus masters. The prior art disclosed by the applicant also does not expressly disclose the limitation of the testing element. The prior art disclosed by the applicant also does not expressly disclose the limitations of claims 2, 3, 5, 6, or 15.

Regarding claim 1, Somer teaches a transmitting node (repeater core 510 of figure 5) and a receiving node (transceivers 530-533 of figure 5). The limitation of the loop path of the transmitting node (repeater core 510) is indicated by the multiplexer 544 which can select to have the data from the receive port 571 transmitted back out the transmit port 570. The limitation of the loop path of the receiving node (transceiver) is indicated by the multiplexer 630 in figure 6. The limitation of the testing element for writing a test data packet is taught by Somer in the test transceiver 580 of figure 5.

Regarding claims **2 and 3**, the limitation of the transmitting loop register of claim 2 is taught by the select input 544a of Figure 5 of Somer and the limitation of the receiving loop register of claim 3 is taught by the loopback enable 630a of figure 6 of Somer. In column 8, lines 62-62 and column 9, lines 22-23, Somer teaches that software controls the select input 544a and the loopback enable 630a. For software to control this input, there must inherently be a register by which software modifies the value of these inputs.

Regarding claim **5**, the limitation of the test data packet being written to the transmitting node is taught by Somer in lines 12-13 of column 9 "During testing, a test packet is transmitted to the test port 580b of the repeater core logic 510". The transmitting of the test packet constitutes writing the test packet to the transmitting node (repeater core logic 510).

Regarding claim **6**, the limitation of the transmitting node (repeater core logic 510) reading data from the receiving packet routing bus (receive bus 520) is taught by Somer in lines 50-51 of column 9 "From the receive bus 520, the test packets are transmitted to the receive port 571 of the repeater core logic 510". The limitation of the receiving node reading data from the transmitting packet routing bus (transmit bus 521) is taught by Somer in lines 43-44 of column 9 "The transmit bus 521 then transmits the test packet to the transmitter 533a".

The prior art disclosed by applicant and Somer are analogous art because they are from the same field of endeavor of loop testing communication systems involving transmit and receive busses. At the time of the invention, it would have been obvious to

a person of ordinary skill in the art to modify the prior art disclosed by the applicant by adding a test element for writing a test data packet for routing in either a receiving or transmitting node and by looping the test data packet at the receiving node (and providing a loop indicating register to control the looping). The motivation for doing so would be to test the communication system. This is suggested by Somer in 36-40 of column 1 "if there is a breakdown in a communication network system, it is desirable to test the communication hub in its normal working environment without removing the communication hub from the network".

The combination of the prior art disclosed by the applicant and Somer described above does not expressly disclose the limitations of claim 1 of the registers in the transmitting and receiving bus masters. The combination of the prior art disclosed by the applicant and Somer described above also does not expressly disclose the limitation of claim 15 of routing the test data packet according to the destination address.

Regarding claim 1, the limitation of the transmitting bus master and the receiving bus master including a register for storing an address of one of the transmitting node and receiving node for managing a transfer of the data packet is taught by Chung in column 13, lines 59-63 "The bus controller 426 also facilitates storing addresses of nodes and associated port identifications in the look-up tables and facilitates utilizing the look-up tables for directing packets among the ports 416-420 based upon the destination address of each packet."

Regarding claim 15, the limitation of routing the test data packet according to the destination address is taught by Chung in lines 59-63 of column 13.

The prior art disclosed by the applicant, Somer, and Chung are analogous art because they are from the same field of endeavor of communication systems using a bus to communicate between nodes. At the time of the invention, it would have been obvious to one of ordinary skill in the art modify the combination of the applicant's admitted prior art and Somer (described above) by (1) adding a register for storing an address of one of the transmitting node and receiving node to both the transmitting bus master and the receiving bus master and (2) routing the test data packet according to the destination address. The motivation for doing so would be to assist in the directing of packets as suggested by Chung in line 62 of column 13.

Therefore, it would have been obvious to combine Chung with the prior art disclosed by the applicant and Somer for the purpose of assisting in directing the test packets to obtain the invention as specified in claim 1-3, 5-8, and 15.

Allowable Subject Matter

9. Claims 4, 9, 12, 13, 17, 18, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert C. Scheibel whose telephone number is 703-305-9062. The examiner can normally be reached on 6:30-3:30.

Art Unit: 2666

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 703-308-5463. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

RC S
12-8-03

Robert C. Scheibel
Examiner
Art Unit 2666

Seema S. Rao
SEEMA S. RAO *12/8/03*
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600